REMARKS/ARGUMENTS

AMENDMENTS TO THE SPECIFICATION

Applicants have amended paragraphs [0001], [0024] and [0025] to correct typographical errors. In particular, paragraph [0025] was corrected to bring the reference numerals in agreement with Figure 4 as originally filed. No new matter has been added.

AMENDMENTS TO THE CLAIMS

Applicants have amended dependent claim 13 to in accordance with the terminology of claim 2 from which claim 13 depends. No new matter has been added.

CLAIM REJECTIONS – 35 U.S.C § 103

Claims 1-3, 11, 15, 16, 23, 24, 32, 36, and 37 were rejected over Carlson et al. U.S. Patent No. 2,508,744 (hereinafter "Carlson") for the reasons set forth in paragraph 5 of the 26 January 2006 Office Action. The rejection alleges that Carlson's recycle stream satisfies Applicant's "second propylene feed" limitation. Applicants previous arguments were discounted because the claims do not contain the features argued.

Applicants respectfully traverse the rejection because at least two of the steps of the method recited in the independent claims are neither taught nor suggested; *a fortiori*, the recited method steps are contrary to the teachings and method of Carlson (the same argument applies against Shamshoum, below). MPEP §2143.03 ("To establish a *prima facie* case of obviousness of a claims invention, all the claim limitations must be taught or suggested by the prior art.").

Independent method claim 1 requires (i) stopping the flow of catalyst passing through the conduit; and (ii) removing and replacing a first section of the conduit.

Independent method claim 2 requires (i) closing the catalyst valve and the first propylene valve; and (ii) removing and replacing the first section of the conduit.

Independent method claim 23 and requires (i) closing the catalyst valve and the first propylene valve; and (ii) removing and replacing the first section of conduit.

Not only is Carlson void of these two steps but the disclosure of Carlson suggests to the skilled artisan that the catalyst feed must be maintained throughout the process without stoppage.

Note first that the Carlson process is for the production of C_9-C_{24} "polymers" from BF_3 and oxygen-containing polar organic compounds. Carlson requires that the catalyst, oxygen-containing compound, and feed be constantly fed to the reactor; and that the catalyst be constantly recycled to the reactor via line 22-24. *See* Carlson, col. 3, lns. 15, 65-66 (recycling the catalyst continuously). Carlson is insistent on full intimate contact of the catalyst with the feed while maintaining a high pressure to ensure such contact and recovering/recycling all possible catalyst. Recycling is indicated to be continuous in order to recover the maximum possible amount of catalyst. There is absolutely no disclosure or suggestion to remove and replace a section of conduit because Carlson was directed to a finished process plant that could be used continuously or repeatedly without concern about polymerization plugging or other problems. MPEP § 2143.01 ("If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.") *citing In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984).

While the rejection correctly indicates that the independent claims do not recite a plugging condition step, plugging is only one circumstance for which the inventive method is beneficial by removing and replacing a conduit. Note that removal and replacement are an active step of these method claims, suitable for various problems not anticipated by Carlson. Since Carlson is directed to C_9-C_{24} "polymers," it is unlikely that plugging or other problems ever existed to suggest alteration of his process because large polymeric masses are not expected as with large molecular weight polypropylene polymers. *In re Peehs*, 612 F.2d 1287, 1290 (C.C.P.A. 1980) (holding that where there is no evidence of recognition of a problem, it is not proper to say that a solution to the problem would have been obvious) *citing In re Nomiya*, 509 F.2d 566, 572 (C.C.P.A. 1975). This is particularly evident given Carlson's statement that the product polymers are really oligomers for the oily liquid uses suggested. *See* Carlson, col. 4, ln. 16 (product is liquid) and col. 5, lns. 28-33 (uses).

Accordingly, there is no motivation for the skilled artisan to modify Carlson to provide stoppage of catalyst flow or replacement of catalyst feed conduit. Reconsideration and removal of this rejection are respectfully requested. MPEP § 2143.01 ("Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art.").

Claims 1-16, 18, and 23-27 were rejected over Shamshoum et al. U.S. Patent No. 6,239,058 (hereinafter "Shamshoum"). The reference is cited for the disclosure of the apparatus in the drawing figure and indicates that the skilled artisan would be led to insert valves and routinely perform conduit replacement.

Applicants respectfully traverse the rejection because at least two of the steps of the methods recited in the independent claims are neither taught nor suggested; *a fortiori*, the recited method steps are contrary to the teachings and method of Shamshoum. Nothing suggests the combination of these steps in a process of polymerizing an olefin.

Independent claims 1, 2 and 23 recite, at least, the steps indicated above. Independent method claim 18 requires (i) stopping the flow of catalyst; and (ii) replacing a first section of conduit.

Even if the skilled artisan might somehow be motivated to apply valves to the **apparatus** of Shamshoum, there is no suggestion to perform the active **method** steps of stopping catalyst flow and replacing conduit sections, especially in combination in an olefin polymerization process. There are no special suggestions of where to replace a conduit section or how such section would be assembled for intermittent removal and replacement. MPEP §2143.03 ("To establish a *prima facie* case of obviousness of a claims invention, all the claim limitations must be taught or suggested by the prior art."). Even without such teachings, there is no motivation for the skilled artisan to carry out these two active method steps in combination for a polymerization process. *A fortiori*, the recited method steps are contrary to the teachings and method of Shamshoum.

Shamshoum is directed to the advantages of a brief but small prepolymerization of the catalyst to provide increased catalyst efficiency. Shamshoum teaches always providing a flow of prepolymerized metallocene catalyst via the "**continuous** flow reactor used for the prepolymerization of propylene in the liquid phase..." (emphasis added) for a slurry loop reactor. As a slurry loop is indicated by Shamshoum, a continuous, uninterrupted flow of prepolymerized catalyst via the drawing apparatus is required for such continuous operation.

Shamshoum is directed to carefully portioning the catalyst, cocatalyst, and monomer in the prepolymerization reactor 16 to limit prepolymerization so as to coat the catalyst complex with a coating of polymer to achieve catalyst efficiency. *See* Shamshoum, col. 5, ln. 47 (coating)

and col. 10, lns. 28-36 (small portion of monomer, continuous or intermittent supply). Accordingly, the skilled artisan is led to believe that such operation is controlled and nonproblematic, nothing suggests stopping the flow of prepolymerized catalyst to the loop reactor or the need to replace conduit. Furthermore, the pertinent examples of Shamshoum are by autoclave reaction with prepolymerized catalyst. Under such conditions, nothing suggesting a need to remove and replace a conduit is likely to exist.

Even if one argues that the skilled artisan is motivated to stop catalyst flow, there is no motivation to also carry out the active step of replacing a conduit in a polymerization process. *See* MPEP § 2143.01.

Therefore, in the absence of a reference or concrete evidence explicitly supporting such assertions predicated upon sound technical and scientific reasoning, Applicants respectfully submit that the claimed invention is not obvious and request that the rejection be withdrawn.

CONCLUSION

Having demonstrated that the cited reference fails to disclose the invention as claimed, all remaining objections and rejections having been overcome, this application is in condition for allowance. Accordingly, Applicants request early and favorable reconsideration in the form of a Notice of Allowance.

If necessary to affect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to affect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1712 (Docket #: 2002B132/2).

Respectfully submitted,

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